

Morningstar Quarterly Style Monitor: Q3 2022

No style segment was insulated from market turmoil in the third quarter, but growth outperformed value.

Morningstar Inc.

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Executive Summary

This is the latest installment of the Morningstar Quarterly Style Monitor, which is designed to help investors stay on top of style trends. This publication tracks several members of the Morningstar Broad Style index family, as well as the Global Style family, providing insights into their performance drivers and portfolio composition.

Key Takeaways

- ▶ Receding inflation concerns during the first half of the quarter paved the way for a global equity markets rally. During the latter part of the quarter, however, the trend reversed, and all style indexes closed in negative territory. Despite the heightened volatility, growth fared better than value across the globe.
- ▶ Over the past decade in the United States, relative performance has dovetailed nicely with size, as large-cap stocks have outperformed mid-caps, which in turn outflanked small caps. Nevertheless, this size narrative was distorted during the third quarter, with the small-cap segment coming out on top.
- ▶ While their decade-plus dominance remains intact, U.S. large-growth stocks have showed signs of vulnerability caused by the unfavorable macro backdrop, demonstrably underperforming their value counterparts during the first and second quarters. The long-term trend made a comeback during the third quarter, however, as growth outperformed value.
- ▶ Growth also dominated internationally across the mid- and small-cap bands in the U.S., with the U.S. Small Cap Broad Growth Extended Index sustaining the narrowest losses across the style indexes.
- ▶ In the U.S., large-growth stocks' outperformance relative to value was driven preeminently by differences in sector allocations. The underperformance of value internationally was largely underpinned by differences in intra-sector stock exposure, with sector tilts also playing a role.
- ▶ Changes in sector weights were more pronounced than is typical for a period with no reconstitution. The starkest changes were evident in the growth indexes, reflecting their disproportionate share of the general market volatility.
- ▶ Morningstar's broad style indexes effectively diversify most firm-specific risks, though concentration has grown in the Morningstar US Large Cap Broad Growth Index, as the largest growth stocks have become a larger part of the market over the past few years.
- ▶ Valuation spreads between growth and value stocks, measured by P/E (trailing 12 months), have grown over the past decade. They compressed quite a bit during the first three quarters because of growth's dismal performance, but they remained elevated by historical standards.

- ▶ While comparatively higher valuation spreads have historically presaged subpar returns for the more expensive style, the converse seems to be true for large/mid stocks in ex-U.S. developed markets.

Performance Highlights

Returns

The first half of the third quarter of 2022 saw most global equity markets rebound from their June lows as fears concerning inflation pressures and further hawkish sentiments subsided. This market environment pushed growth to post greater gains than value. The trend reversed, however, with an antithetical latter third of the quarter, as higher than expected inflation data was released in mid-July. A strengthening dollar, which spurred worries for weaker than expected third-quarter earnings in the U.S., fears of further rate hikes in 2022 and 2023, and rejuvenated aggressions in the Russia-Ukraine conflict paved the way for a bearish close to the quarter.

Although all our style indexes closed the quarter in significantly negative territory, losses were not distributed evenly across the board. Value exposures bore the brunt of the impact as growth overperformed noticeably across all geographic regions and size segments. For instance, small-value equities in the U.S. lagged their growth counterparts by almost 330 basis points, reversing this year's trend that favored value over growth. The same story was reiterated across different size segments with both large- and mid-growth stocks showing resilience against their value analogues. From a style-agnostic perspective, we observed small caps faring better than mid- and large caps, as the effects of the risk-on attitude of the first half of the quarter rippled through to September.

Globally, where our style family is built by applying Morningstar Indexes' broad style methodology to our suite of Target Market Exposure indexes (targeting large- and mid-cap stocks representing 85% of the investable market), the dynamics closely mirrored those in the U.S., but greater losses were sustained because of exchange-rate movements and the significant strengthening of the dollar. The Morningstar Global Growth Index finished ahead of the pack compared with its non-U.S. counterparts, some of which sustained losses in the double digits (such as the Morningstar Emerging Markets Index). In global regions, however, spreads between growth-value styles were of lesser magnitudes than those in the U.S.

Exhibit 1 Returns (%)

| US | 1 Qr | 1 Yr | 5 Yr | 10 Yr | Since Inception* |
|---|-------------|-------------|-------------|--------------|-------------------------|
| Morningstar US Market Extended | -4.53 | -17.96 | 8.58 | 11.37 | 7.80 |
| Morningstar US Market Broad Growth Extended | -3.35 | -26.22 | 10.10 | 12.29 | 7.30 |
| Morningstar US Market Broad Value Extended | -5.57 | -9.65 | 6.58 | 10.15 | 7.86 |
| Morningstar US Large Cap | -4.85 | -17.46 | 9.42 | 11.73 | 7.37 |
| Morningstar US Large Broad Growth | -3.67 | -25.82 | 11.31 | 13.04 | 7.10 |
| Morningstar US Large Broad Value | -5.84 | -9.23 | 7.03 | 10.11 | 7.17 |
| Morningstar US Mid Cap | -3.88 | -17.70 | 7.52 | 11.11 | 8.90 |
| Morningstar US Mid Cap Broad Growth | -2.85 | -26.35 | 8.37 | 11.15 | 7.90 |
| Morningstar US Mid Cap Broad Value | -4.87 | -9.44 | 5.95 | 10.69 | 9.40 |
| Morningstar US Small Cap Extended | -3.35 | -22.77 | 3.49 | 8.54 | 7.95 |
| Morningstar US Small Broad Growth Extended | -1.70 | -29.08 | 3.70 | 8.49 | 6.46 |
| Morningstar US Small Broad Value Extended | -5.03 | -14.56 | 3.49 | 8.66 | 9.26 |
| Global | | | | | |
| Morningstar Global Target Market Exposure | -6.64 | -20.09 | 5.01 | 7.85 | 5.91 |
| Morningstar Global Growth | -5.83 | -27.31 | 5.93 | 8.44 | 6.47 |
| Morningstar Global Value | -7.39 | -13.20 | 3.53 | 6.92 | 5.27 |
| Morningstar Developed Markets ex-US | -9.08 | -23.55 | 0.30 | 4.20 | 2.27 |
| Morningstar Developed Markets ex-US Growth | -8.65 | -28.84 | 1.27 | 4.54 | 2.53 |
| Morningstar Developed Markets ex-US Value | -9.50 | -18.17 | -1.07 | 3.60 | 1.98 |
| Morningstar Emerging Markets | -10.21 | -25.55 | -0.28 | 2.11 | 2.01 |
| Morningstar Emerging Markets Growth | -9.66 | -28.94 | -0.81 | 2.41 | 2.28 |
| Morningstar Emerging Markets Value | -10.76 | -22.63 | 0.06 | 1.83 | 2.15 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

*This includes performance back-tested to the end of June 1997 for U.S. indexes and June 2008 for global indexes. Returns longer than one year annualized. All index performance data displayed are for Total Return USD variants.

Relative to its value counterpart, the Morningstar US Market Broad Growth Extended Index's overperformance was predicated mainly on differences in intra-sector stock selection, with basic materials, communication services, and consumer cyclical being three notable examples. For instance, in the latter sector, overweights in Amazon.com [AMZN](#) and Tesla [TSLA](#) significantly drove the positive relative returns of the growth index. Sector weightings did not play a negligible role, however, as there were some nontrivial contributions at the sector allocation level. For example, meaningful weighting variations in sectors such as consumer cyclical, financial services, and healthcare spearheaded the laggard performance of the value index. Additionally, we saw the energy sector retrenching from the positive forces that drove it through the year, exacerbating the relative underperformance of the value index.

During the third quarter, 2022's prevailing trend (value outperforming growth) reversed, as receding inflation fears during the first half increased risk appetite. July was bullish for growth stocks such as

technology, and those positive headwinds drove growth to crossing the quarter-end line ahead of value. However, as the midpoint of the quarter was in the rearview, a new set of greater than expected inflation data reignited hawkish statements from the Fed, and other central banks, and risk-off sentiments were reinstated as all of our style indexes, across all regions and size segments, closed the quarter in negative territory. Additionally, a strengthening dollar steered an increase in negative earnings expectations for U.S. markets as exposures to global income streams are not inconsequential. Such exchange-rate dynamics were also partially responsible for differences in performance among U.S. and global markets.

Internationally, the outperformance of the Morningstar Global Growth Index was driven mostly by favorable stock exposure (or lack thereof) and sector tilts. For example, stock selection as well as heavier tilts in the consumer cyclical sector, with names such as Tesla and Amazon leading the pack, were bonuses to growth overperformance in the region. The performance decomposition was similar in developed ex-U.S. markets, with both intra-sector stock exposure and sector tilts being the preeminent drivers for growth's relative overperformance. In the region's growth counterpart, underweights in the energy sector as well as individual stock overweights, such as Daiichi Sankyo DSKYF, were significant performance contributors. Performance drivers in emerging markets also followed suit, with underweights in financial services driving growth's insignificant overperformance. Overall, although the trend of growth's dominance persisted across all regions, the effects of style performance spreads were far less prevalent in global markets than those in the U.S.

Over the past decade in the U.S., growth beat value and large caps beat small caps. That's the opposite of what many factor investors have come to expect, as data going back to the 1920s suggests smaller and more value-oriented stocks have tended to do better over the long term.¹ Although this trend was reversed during the first half of 2022 because of prevailing recession sentiments, with value faring better, growth made a notable comeback in the third quarter, outperforming its value equivalent irrespective of regional orientation.

Extending the lookback period to the end of June 1997, which is the earliest available for the U.S. broad style indexes, small- and mid-cap stocks did in fact beat large caps, and the all-cap Morningstar US Market Broad Growth Extended Index lagged its value counterpart (though not materially so). Globally, since the end of June 2008 (the longest available performance horizon), growth stocks outperformed value. Still, in the U.S., there was a notable trend across the lower ends of the market-cap spectrum: Smaller value stocks tended to do better than their growth counterparts. This is consistent with academic studies, which have shown that the value effect has historically been the most pronounced among the smallest stocks.²

Risk

Not surprisingly, over long time horizons, smaller-cap stocks in the U.S. have tended to exhibit greater volatility and sensitivity to market fluctuations than their larger counterparts, as Exhibits 2 and 3 show.

¹ Source: French Data Library.

² Fama, E.F., & French, K. 2014. "A Five-Factor Asset Pricing Model." September. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2287202

These companies tend to have more volatile earnings as they are more leveraged to the vagaries of niche markets and have a lower likelihood of enjoying durable competitive advantages relative to larger stocks.

That said, over the past year, the converse has held true across the U.S. size spectrum, with small-cap stocks being equally volatile and less sensitive to movements in the broader market. While we would not expect this trend to hold over the long term, we find it more plausible over short time horizons. In addition to structural characteristics of the larger-cap indexes (including higher concentration and larger stocks being more prone to frequent news flow that can drive short-term trading activity), fluctuations in sector weightings also play a role. For example, the small-cap index was overweight the real estate sector over the past year, which exhibited lower volatility than most sectors.

Exhibit 2 Standard Deviation (%)

| US | 1 Yr | 5 Yr | 10 Yr | Since Inception* |
|---|-------------|-------------|--------------|-------------------------|
| Morningstar US Market Extended | 21.71 | 18.65 | 14.84 | 15.99 |
| Morningstar US Market Broad Growth Extended | 26.90 | 20.71 | 16.33 | 18.46 |
| Morningstar US Market Broad Value Extended | 18.48 | 17.99 | 14.42 | 15.15 |
| Morningstar US Large Cap | 21.98 | 18.17 | 14.45 | 15.61 |
| Morningstar US Large Broad Growth | 28.32 | 21.03 | 16.52 | 18.30 |
| Morningstar US Large Broad Value | 17.85 | 16.93 | 13.64 | 14.60 |
| Morningstar US Mid Cap | 21.51 | 20.01 | 15.96 | 17.56 |
| Morningstar US Mid Cap Broad Growth | 24.44 | 20.76 | 16.54 | 19.94 |
| Morningstar US Mid Cap Broad Value | 20.46 | 20.71 | 16.43 | 17.28 |
| Morningstar US Small Cap Extended | 22.02 | 23.21 | 18.95 | 20.24 |
| Morningstar US Small Broad Growth Extended | 23.98 | 22.75 | 18.75 | 22.58 |
| Morningstar US Small Broad Value Extended | 21.28 | 24.85 | 20.04 | 19.66 |
| Global | | | | |
| Morningstar Global Target Market Exposure | 19.04 | 17.10 | 13.93 | 16.91 |
| Morningstar Global Growth | 22.73 | 18.04 | 14.54 | 17.01 |
| Morningstar Global Value | 17.13 | 17.52 | 14.28 | 17.26 |
| Morningstar Developed Markets ex-US | 17.79 | 16.78 | 14.35 | 17.92 |
| Morningstar Developed Markets ex-US Growth | 20.32 | 16.41 | 13.89 | 17.00 |
| Morningstar Developed Markets ex-US Value | 17.19 | 18.47 | 15.73 | 19.32 |
| Morningstar Emerging Markets | 13.39 | 17.52 | 15.92 | 21.07 |
| Morningstar Emerging Markets Growth | 13.53 | 17.96 | 15.71 | 20.72 |
| Morningstar Emerging Markets Value | 14.44 | 18.61 | 17.29 | 21.59 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

*This includes performance back-tested to the end of June 1997 for U.S. indexes and June 2008 for global indexes. Returns longer than one year annualized. All index performance data displayed are for Total Return USD variants.

Exhibit 3 Market Beta

| US | 1 Yr | 5 Yr | 10 Yr | Since Inception* |
|---|-------------|-------------|--------------|-------------------------|
| Morningstar US Market Extended | 1.00 | 1.00 | 1.00 | 1.00 |
| Morningstar US Market Broad Growth Extended | 1.21 | 1.07 | 1.06 | 1.11 |
| Morningstar US Market Broad Value Extended | 0.81 | 0.93 | 0.94 | 0.89 |
| Morningstar US Large Cap | 1.01 | 0.97 | 0.97 | 0.97 |
| Morningstar US Large Broad Growth | 1.26 | 1.07 | 1.05 | 1.08 |
| Morningstar US Large Broad Value | 0.78 | 0.87 | 0.88 | 0.86 |
| Morningstar US Mid Cap | 0.97 | 1.05 | 1.05 | 1.06 |
| Morningstar US Mid Cap Broad Growth | 1.08 | 1.07 | 1.07 | 1.16 |
| Morningstar US Mid Cap Broad Value | 0.87 | 1.03 | 1.03 | 0.95 |
| Morningstar US Small Cap Extended | 0.97 | 1.16 | 1.17 | 1.14 |
| Morningstar US Small Broad Growth Extended | 1.03 | 1.13 | 1.15 | 1.23 |
| Morningstar US Small Broad Value Extended | 0.92 | 1.19 | 1.20 | 1.05 |
| Global | | | | |
| Morningstar Global Target Market Exposure | 1.00 | 1.00 | 1.00 | 1.00 |
| Morningstar Global Growth | 1.16 | 1.02 | 1.01 | 0.99 |
| Morningstar Global Value | 0.86 | 0.99 | 0.99 | 1.00 |
| Morningstar Developed Markets ex-US | 1.00 | 1.00 | 1.00 | 1.00 |
| Morningstar Developed Markets ex-US Growth | 1.09 | 0.94 | 0.94 | 0.93 |
| Morningstar Developed Markets ex-US Value | 0.91 | 1.07 | 1.07 | 1.06 |
| Morningstar Emerging Markets | 1.00 | 1.00 | 1.00 | 1.00 |
| Morningstar Emerging Markets Growth | 0.95 | 0.99 | 0.95 | 0.97 |
| Morningstar Emerging Markets Value | 1.04 | 1.02 | 1.05 | 1.01 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

*This includes performance back-tested to the end of June 1997 for U.S. indexes and June 2008 for global indexes. Returns longer than one year annualized. All index performance data displayed are for Total Return USD variants.

Independent of size, value and growth stocks in the U.S. have tended to exhibit similar risk to each other over the past decade, though several periods have contravened this pattern. For example, growth stocks were more volatile over the longest look-back period from July 1997 through September 2021. This is partly attributable to the dot-com bubble, and subsequent correction, during the early 2000s. Growth stocks have also been substantially riskier over the past year, with the delta relative to value widening during the first half of 2022, as market turmoil disproportionately affected the growth style, and only tightening recently during the third quarter.

Globally, value stocks have tended to be more volatile over longer time horizons. However, the difference has been inconsequential, and, over the past year, we've actually seen the converse, with global growth stocks exhibiting more volatility relative to value with the exception of the emerging markets region. This mirrors what we've seen in the U.S. and is an interesting contrast to longer time periods, where risk attributes between the U.S. and global exposures have diverged.

While their risk, when viewed through the conventional lens of return volatility, will go through periods of divergence and convergence, it is worth remembering that value and growth styles carry different fundamental risk profiles. Value stocks tend to have weaker profitability, encounter stiffer competition, and face more daunting secular headwinds than growth stocks. Growth stocks tend to have healthier businesses and more auspicious industry positioning, but they often come with rich valuations that could compress if they fall short of (often lofty) investor expectations. That said, some of these value and growth risks are firm-specific, which the broad style indexes largely diversify away.

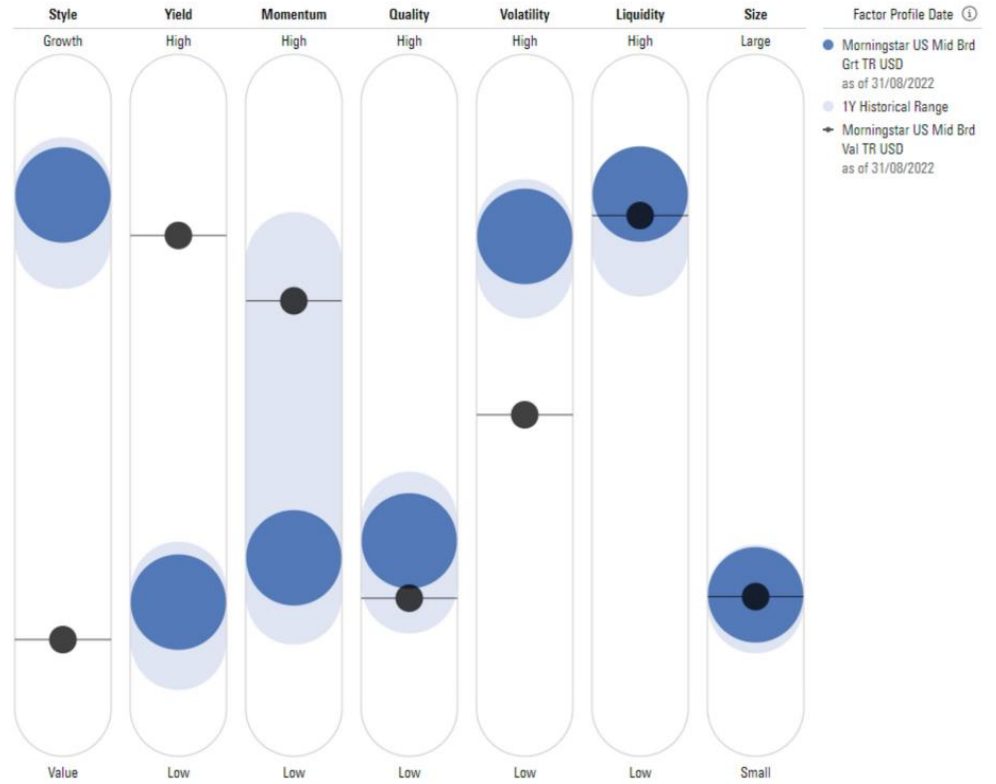
Factor Attribution

The proprietary Morningstar Standard Factor Model can be used to provide useful insights into risk factors that are not idiosyncratic but that drive performance across the style indexes. It is composed of seven factors that are widely accepted in the industry as reliable indicators of the underlying drivers of market performance: style, yield, momentum, quality, volatility, liquidity, and size.

As expected, the Morningstar US Mid Cap Broad Growth Index (Exhibit 4) has considerably greater factor exposure to volatility than its value counterpart, while value dominates in yield and momentum over the past year. These findings are supported by academic research, as growth faces predominantly greater variation of returns and value tends to provide greater amounts of dividends and buybacks per unit of valuation.

Similarly, the Morningstar Developed Markets ex-US Value TME Index (Exhibit 5) is more substantially driven by yield and momentum compared with growth. An interesting observation would be the overexposure of growth to quality, which is usually dominated by value. This could be attributed to the fact that the growth index of the region is dominated by consumer defensive and healthcare equities, such as Nestle SA [NSRGF](#) and AstraZeneca PLC [AZNCF](#) that are characterized by conservative leverage and sturdy returns on equity. The same narrative is reiterated in emerging markets (Exhibit 6) with the only notable difference being the heavier relative exposure of growth to volatility as compared with other regions.

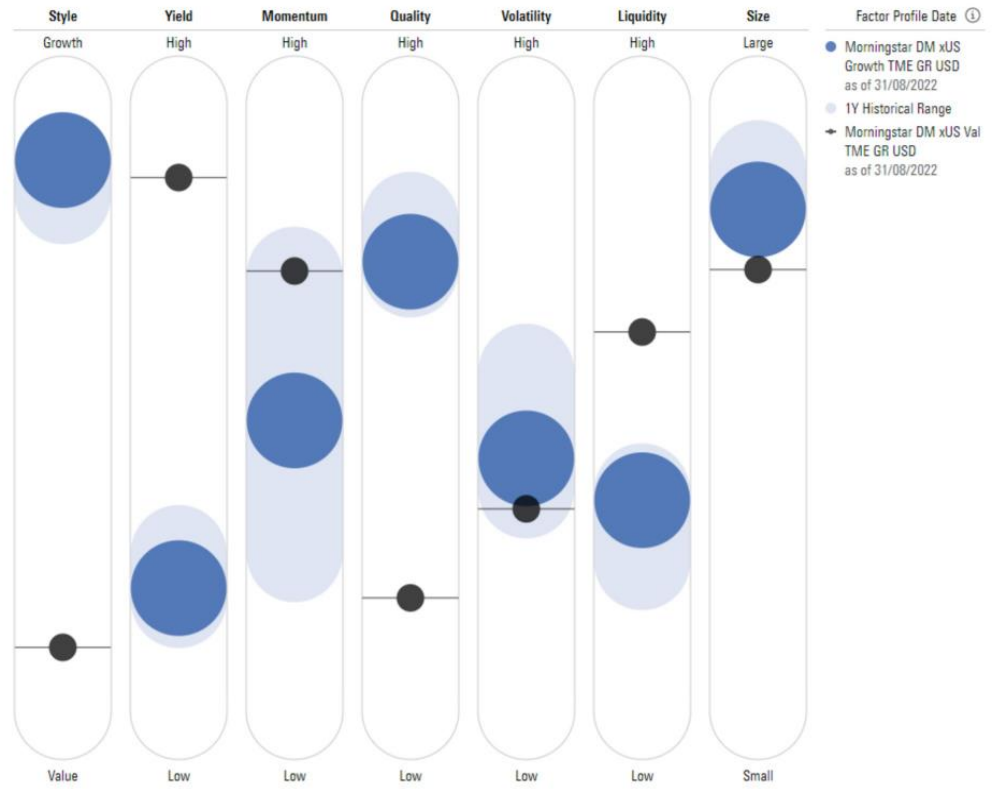
Exhibit 4 Factor Profile: Morningstar US Mid Broad Growth Versus Morningstar US Mid Broad Value



Source: Morningstar Direct. Data as of Aug. 31, 2022.

* This includes performance back-tested to the end of June 1997 for U.S. indexes and June 2008 for global indexes. Returns longer than one year annualized. All index performance data displayed are for Total Return USD variants.

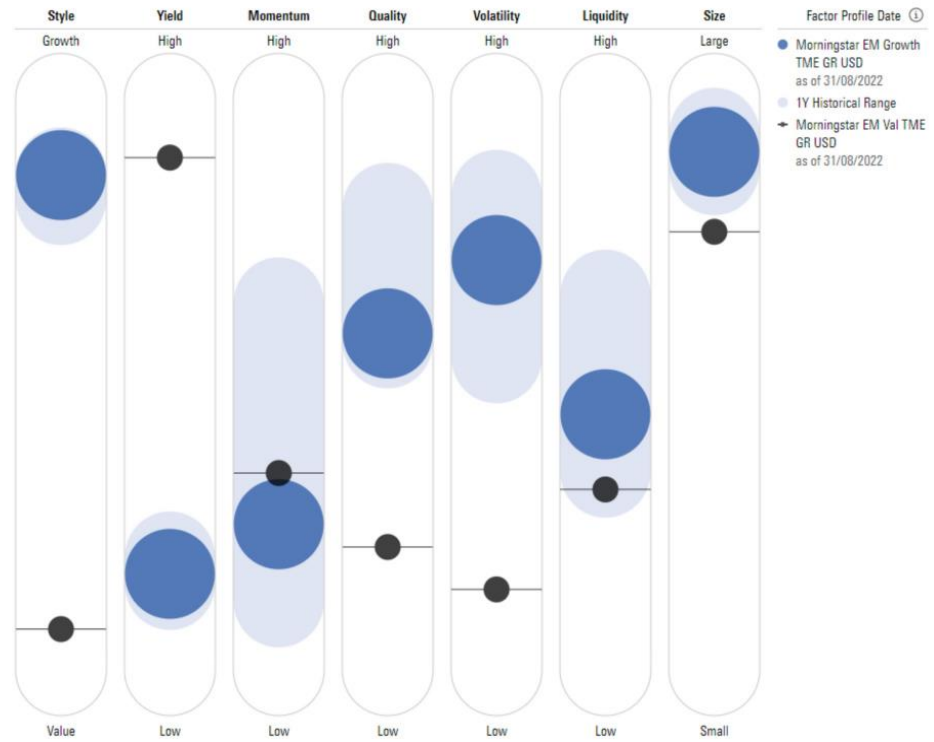
Exhibit 5 Factor Profile: Morningstar Developed Markets ex-US Growth TME Versus Morningstar Developed Markets ex-US Value TME



Source: Morningstar Direct. Data as of Aug. 31, 2022.

* This includes performance back-tested to the end of June 1997 for U.S. indexes and June 2008 for global indexes. Returns longer than one year annualized. All index performance data displayed are for Total Return USD variants.

Exhibit 6 Factor Profile: Morningstar Emerging Markets Growth TME Versus Morningstar Emerging Markets Value TME



Source: Morningstar Direct. Data as of Aug. 31, 2022.

* This includes performance back-tested to the end of June 1997 for U.S. indexes and June 2008 for global indexes. Returns longer than one year annualized. All index performance data displayed are for Total Return USD variants.

Portfolio Highlights

With no reconstitutions taking place across the Broad Styles family during the September quarter (the next reconstitution will be in December), price fluctuations explain most of the changes to the composition of the indexes relative to the second quarter, though corporate actions also contributed. For example, SailPoint Technologies Holdings, a leading corporation in identity security, was a notable delisting from the Morningstar US Market Extended Index, via acquisition by Thoma Bravo, one of the largest private equity firms globally. Vifor Pharma AG *GNHAY* and Avast PLC *AVTTY* exited the Morningstar Developed Markets ex-US TME Index as both ceased public trading due to takeover and merger, respectively. Similarly, Evergrande Property Services Group Ltd *EVGPF* was dropped from the Morningstar Emerging Markets TME Index because of a trading suspension imposed by the Hong Kong Stock Exchange, while Piramal Pharma Ltd was a notable addition to the index.

Sectors

The sector weightings for the broad style indexes are shown in Exhibit 7.

Exhibit 7 Sector Composition (%)

| US | Basic Materials | Comm Svs | Consumer Cyc | Consumer Def | Energy | Financial Services | Healthcare | Industrials | Real Estate | Technology | Utilities |
|---|----------------------------|---------------------|-------------------------|-------------------------|---------------|-------------------------------|-------------------|--------------------|------------------------|-------------------|------------------|
| Morningstar US Market Extended | 2.51 | 7.68 | 11.30 | 6.56 | 4.74 | 13.21 | 13.93 | 9.12 | 3.72 | 24.18 | 3.04 |
| Morningstar US Market Broad Growth Extended | 2.23 | 8.04 | 17.04 | 3.31 | 1.51 | 8.15 | 11.26 | 6.57 | 4.02 | 37.50 | 0.36 |
| Morningstar US Market Broad Value Extended | 2.77 | 7.34 | 6.08 | 9.53 | 7.68 | 17.85 | 16.31 | 11.43 | 3.45 | 12.07 | 5.48 |
| Morningstar US Large Cap | 1.74 | 9.42 | 11.34 | 7.46 | 4.41 | 12.86 | 14.64 | 7.00 | 1.64 | 27.55 | 1.93 |
| Morningstar US Large Broad Growth | 1.58 | 9.91 | 19.41 | 3.46 | 0.73 | 8.20 | 8.90 | 2.59 | 2.13 | 43.08 | 0.00 |
| Morningstar US Large Broad Value | 1.89 | 8.99 | 4.13 | 11.03 | 7.69 | 17.01 | 19.76 | 10.94 | 1.21 | 13.69 | 3.65 |
| Morningstar US Mid Cap | 4.58 | 3.51 | 10.59 | 4.51 | 5.68 | 13.60 | 10.56 | 14.05 | 9.31 | 16.36 | 7.26 |
| Morningstar US Mid Cap Broad Growth | 3.65 | 3.72 | 11.05 | 2.97 | 3.65 | 8.52 | 14.07 | 16.67 | 9.44 | 24.96 | 1.30 |
| Morningstar US Mid Cap Broad Value | 5.47 | 3.29 | 10.15 | 6.02 | 7.65 | 18.54 | 7.15 | 11.50 | 9.19 | 7.99 | 13.05 |
| Morningstar US Small Cap Extended | 4.18 | 2.76 | 12.60 | 3.74 | 5.38 | 15.30 | 15.76 | 15.45 | 8.23 | 14.00 | 2.58 |
| Morningstar US Small Broad Growth Extended | 4.12 | 2.87 | 11.91 | 3.28 | 2.80 | 6.63 | 23.77 | 15.24 | 6.67 | 21.62 | 1.08 |
| Morningstar US Small Broad Value Extended | 4.29 | 2.38 | 13.38 | 4.24 | 7.77 | 23.92 | 7.57 | 15.65 | 9.88 | 6.89 | 4.04 |
| Global | | | | | | | | | | | |
| Morningstar Global Target Market Exposure | 4.49 | 7.61 | 11.08 | 7.75 | 5.23 | 15.98 | 12.21 | 9.92 | 2.83 | 19.60 | 3.19 |
| Morningstar Global Growth | 3.52 | 8.31 | 15.52 | 6.81 | 1.86 | 10.78 | 11.74 | 9.15 | 2.70 | 28.46 | 1.14 |
| Morningstar Global Value | 5.42 | 6.96 | 6.82 | 8.66 | 8.45 | 20.98 | 12.68 | 10.64 | 2.92 | 11.12 | 5.15 |
| Morningstar Developed Markets ex-US | 7.72 | 5.01 | 10.01 | 10.01 | 6.53 | 19.51 | 12.03 | 15.22 | 2.83 | 7.70 | 3.33 |
| Morningstar Developed Markets ex-US Growth | 5.42 | 4.58 | 11.92 | 11.14 | 2.58 | 11.28 | 17.91 | 18.57 | 2.20 | 12.50 | 1.89 |
| Morningstar Developed Markets ex-US Value | 10.02 | 5.44 | 8.14 | 8.91 | 10.38 | 27.70 | 6.24 | 11.93 | 3.34 | 2.96 | 4.76 |
| Morningstar Emerging Markets | 8.53 | 10.14 | 13.45 | 6.72 | 5.35 | 23.02 | 3.31 | 6.22 | 1.74 | 17.54 | 3.26 |
| Morningstar Emerging Markets Growth | 6.41 | 13.32 | 15.59 | 9.58 | 3.35 | 18.31 | 5.52 | 5.69 | 1.24 | 18.15 | 2.80 |
| Morningstar Emerging Markets Value | 10.73 | 6.97 | 11.31 | 3.85 | 7.39 | 27.88 | 1.09 | 6.53 | 2.20 | 16.94 | 3.76 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

There are persistent differences in growth rates and valuations across sectors, leading to diverging sector weightings across the value and growth indexes, which can affect performance. For example, the Morningstar US Market Broad Growth Extended Index has greater exposure to the consumer cyclical, technology, and communication-services sectors than its value counterpart and less exposure to the consumer defensive, financial services, industrials, utilities, and energy sectors. Most of these sector tilts were also present five years ago.

Interestingly, these sector tilts become more nuanced globally. For example, in developed markets outside the U.S., the communication services sector is actually underrepresented in the growth index relative to value. Additionally, the Morningstar Emerging Markets Value TME Index is almost equally invested into the technology sector with its growth counterpart, which is uncharacteristic of what we observe in the U.S., where the growth counterpart is heavily skewed into technology. While the ex-U.S. indexes only cover the large/mid-size bands (as opposed to the all-cap coverage of the Morningstar US Market Extended Index), given cap weighting, we would expect these style differences between regions to hold even when small caps are included.

In the U.S., there are also notable sector differences along the market-cap spectrum. The Morningstar US Large Cap Index has greater exposure to communication-services, consumer defensive, and technology stocks than the Morningstar US Small Cap Extended Index and less exposure to the real estate and industrials sectors. Such tilts were also present five years ago, but at that time, healthcare stocks represented a greater portion of the large-cap index than they did for the small-cap index. Since then, that relationship has flipped.

With no reconstitution, the extent of sector changes versus the last quarter were far less pronounced than what we outlined in the previous Style Monitor installment. Still, they exceeded the ranges that are typical for a rebalance period, reflecting the heightened volatility during the quarter. The starkest changes materialized in the Morningstar Emerging Markets Growth TME Index. The communication services sector's proportion of the portfolio sunk significantly by over 120 basis points, while financial services' representation increased by 150 basis points. It is no surprise that both these drifts occurred in the emerging-markets growth index, as this region and style bore the brunt of the general market volatility during the quarter.

Other notable changes could be observed in the Morningstar US Large Cap Broad Growth Index and its U.S. mid-cap equivalent, which saw the consumer cyclical and technology sectors, respectively, inflate their weight by over 150 basis points.

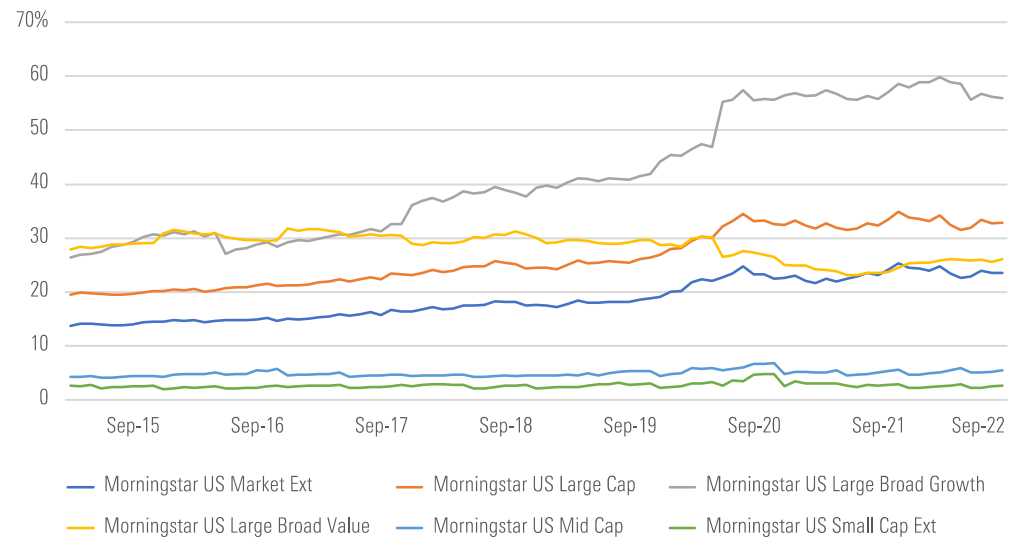
Concentration

The broad style indexes all skew toward the larger names within their respective segments, owing to market-cap weighting. This weighting approach reflects the composition of the opportunity set and allows companies to become a bigger part of the portfolios as they grow within each market-cap segment.

Concentration is most pronounced in the large-cap indexes (as shown in Exhibit 8), particularly in the Morningstar US Large Cap Broad Growth Index, where the percentage of assets in the top 10 constituents has grown from 39% at the end of September 2018 to 56% four years later. The market has become more concentrated as the largest growth stocks have outperformed. This not only increased their market-cap weightings but also reduced the number of large-growth stocks required to reach 50% coverage of the large-cap market, reducing the number of stocks in the portfolio. Today, the Morningstar US Large Cap Broad Growth Index holds 119 stocks, down from 160 four years ago. Moreover, the largest constituent in the index today (Microsoft MSFT) comprises almost 15% of the portfolio, whereas four years ago, the equivalent weight for the largest holding, which was the same constituent, was less than almost half today's number, roughly 8%.

The small- and mid-cap indexes have far less concentration in their top 10 constituents, as there is a natural cap on how large constituents can grow before they advance to the next market-cap segment.

Exhibit 8 Percentage of Portfolio in Top 10 Holdings - U.S.

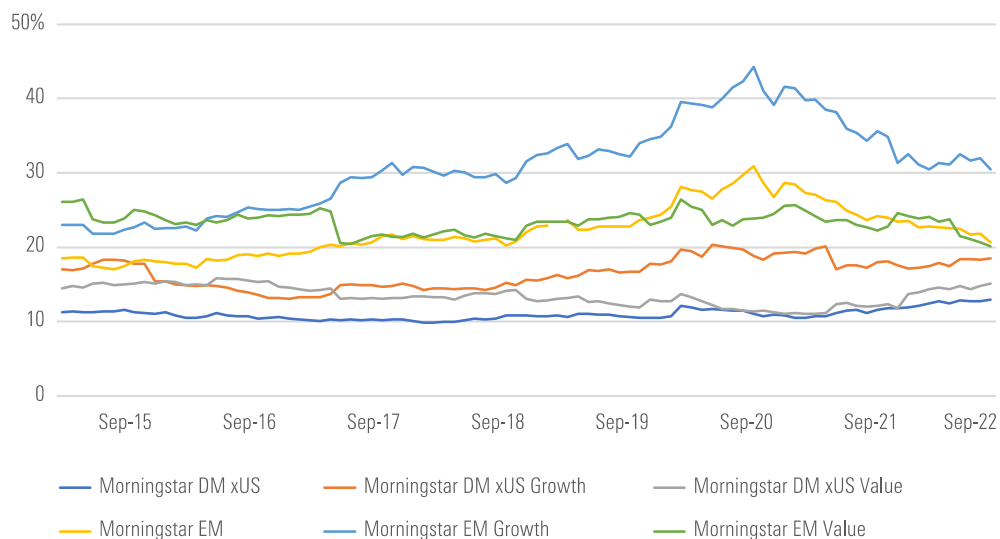


Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 9 shows concentration trends for the style indexes across emerging markets and ex-U.S. developed markets, along with the corresponding parent indexes. Concentration has been perennially higher in emerging markets, which implies that there are factors endemic to these markets that facilitate greater concentration of capital. Additionally, while the portfolios largely seem to be getting more concentrated over time, the recent trend in the Morningstar Emerging Markets Growth TME Index is interesting, with concentration falling precipitously since October 2020. This is partially due to the

underperformance of Chinese mega-caps like Alibaba BABA and Tencent TCEHY, which have been beleaguered by regulatory crackdowns on gaming, digital commerce, and the like.

Exhibit 9 Percentage of Portfolio in Top 10 Holdings - Global



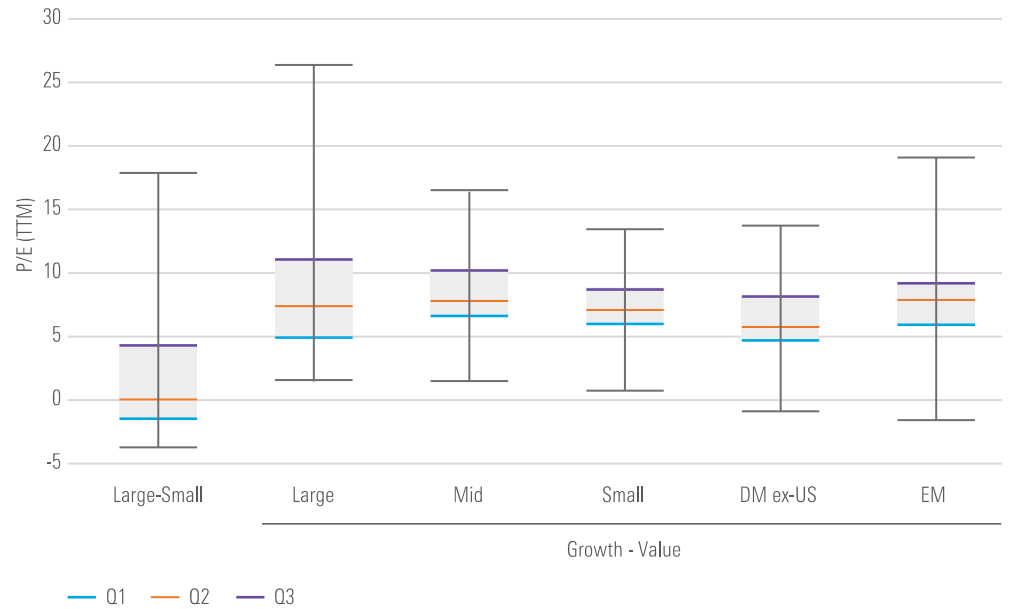
Source: Morningstar Direct. Data as of Sept. 30, 2022.

Valuations

By definition, growth stocks trade at higher valuations than value stocks, but after years of stronger performance, growth stocks have become more expensive relative to value. This trend holds true both in the U.S. and globally, as illustrated in Exhibits 10 and 10.1. These figures show the spread between the trailing 12-month P/E ratios of the growth and value indexes in the Morningstar Broad Style family for each of the three market-cap segments, as well as for the ex-US developed-markets and emerging-markets regions of the Global Style family. It also includes this spread data for the Morningstar US Large Cap and Morningstar US Small Cap Extended indexes, along with historical distributions for all the spreads.

After a harrowing first half of the year, followed by a brief relative recovery during the third quarter, relative valuations for growth stocks have come down quite a bit compared with the end of 2021. In December, the growth-value P/E spread was in the top decile of historical distributions for all size bands and regions, with some of them in the 99th percentile, approaching unprecedented levels. Still, despite the compression, spreads remain elevated by historical standards, particularly in the U.S. mid-cap realm.

Exhibit 10 P/E (TTM) Valuation Spread



Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 10.1 Current Valuation Spreads Are at High Levels in the U.S. and Elevated Internationally

| | Growth - Value | | | | | |
|------------------------------|----------------|-------|-------|-------|----------|-------|
| | Large-Small | Large | Mid | Small | DM ex-US | EM |
| Current P/E Valuation Spread | 7.86 | 11.41 | 11.50 | 8.01 | 9.09 | 10.73 |
| Percent Rank (%) | 84.1 | 79.4 | 84.4 | 62.7 | 80.2 | 87.8 |

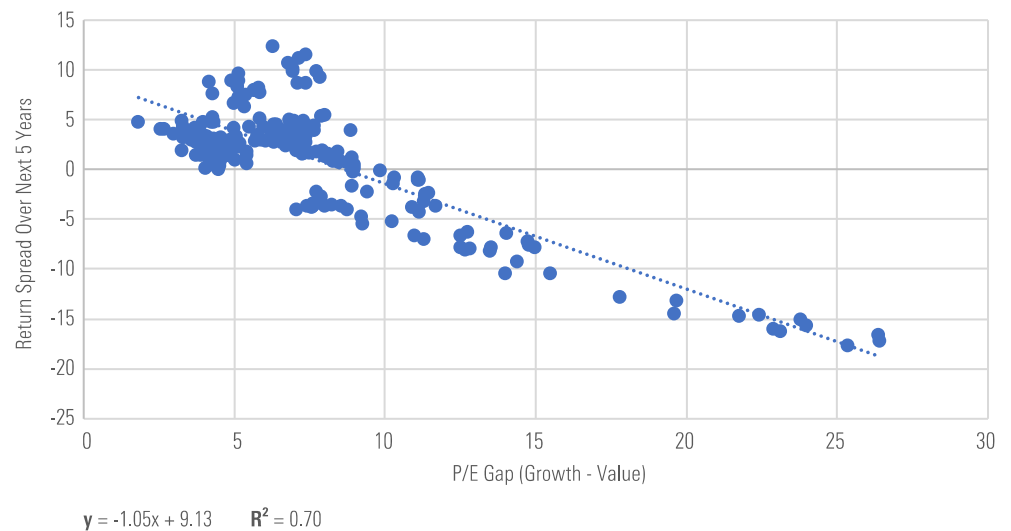
Source: Morningstar Direct. Data as of Sept. 30, 2022.

Unusually wide valuation spreads may portend lower expected returns for the pricier index. Historically, in the U.S., wider valuation spreads have been associated with lower returns over the next five years for the large- and mid-cap growth indexes relative to their value counterparts, as Exhibits 11 and 12 show. The same is true of the large-cap index relative to the small-cap extended index.

There was not a strong relationship between valuation spreads and future returns for the U.S. small-cap growth and value indexes. The same is true of the large-mid universe in emerging markets, displayed in Exhibit 16.

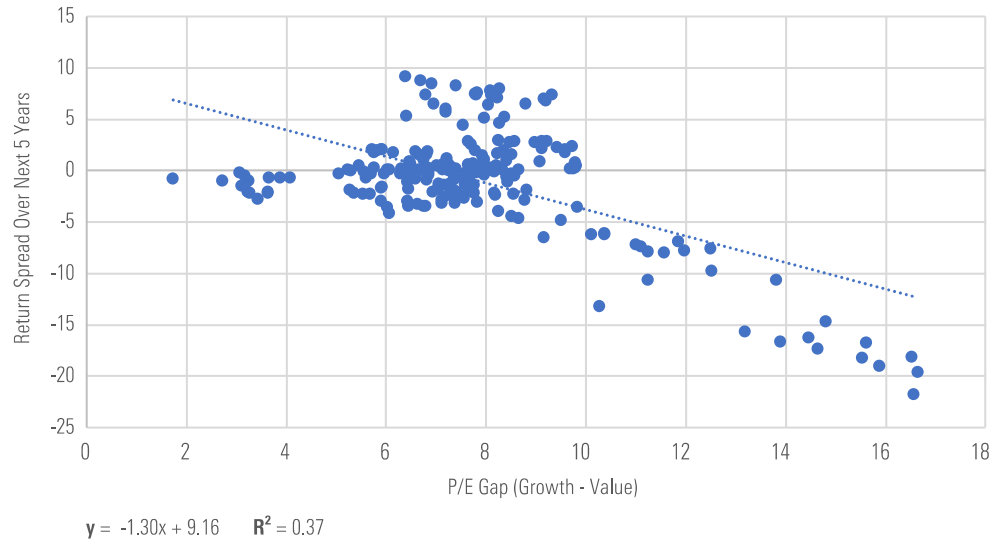
A startling and counterintuitive phenomenon can be observed in developed markets outside the U.S. (Exhibit 15), where there seems to have been a significantly positive relationship between valuation spreads and subsequent five-year returns. We view this as an anomaly, likely attributable to external economic factors that have disproportionately benefited growth stocks over this period. It is also worth noting that the historical distribution of valuation spreads has been tightest in these ex-U.S. developed markets.

Exhibit 11 Relationship Between Valuations and Future Returns: November 1999 - September 2022
(Morningstar US Large Broad Growth Index - Morningstar US Large Broad Value Index)



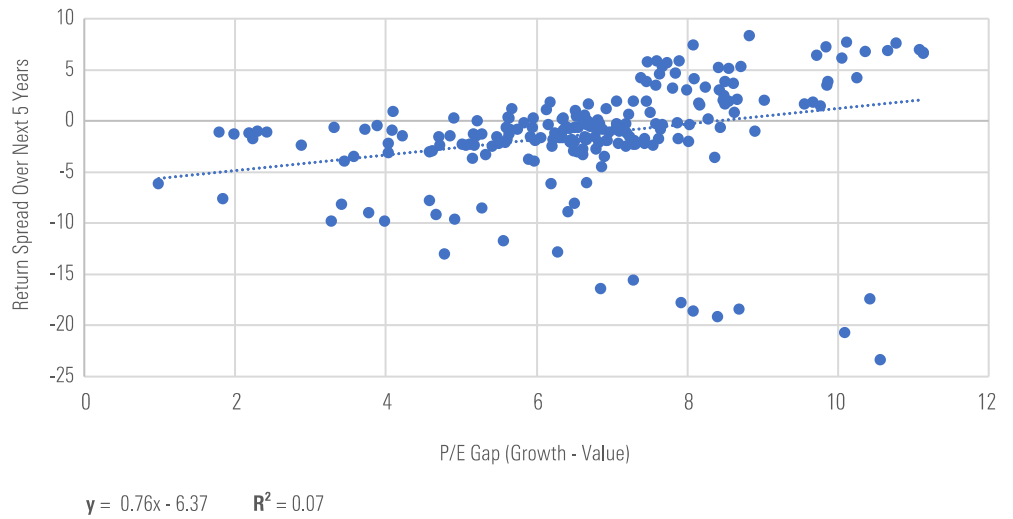
Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 12 Relationship Between Valuations and Future Returns: November 1999 - September 2022
(Morningstar US Mid Broad Growth Index - Morningstar US Mid Broad Value Index)



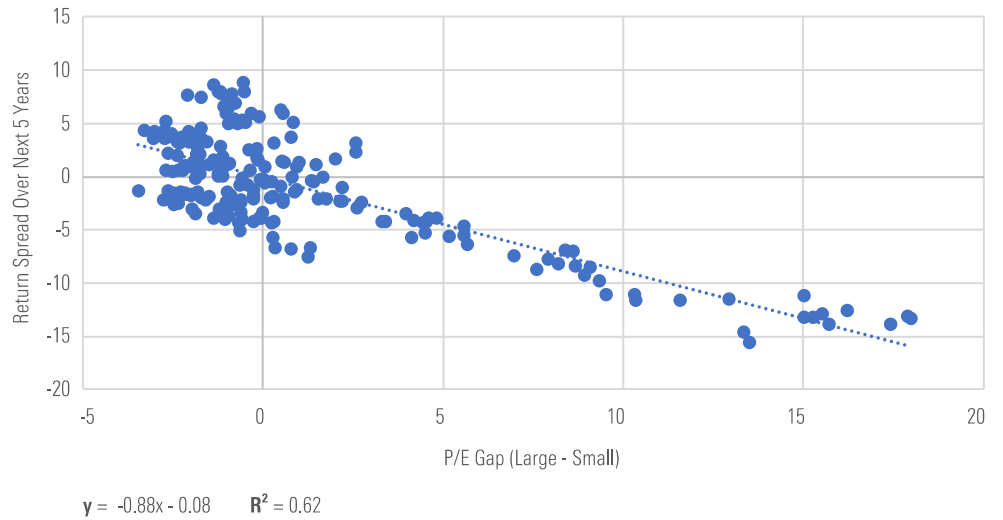
Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 13 Relationship Between Valuations and Future Returns: November 1999 - September 2022
(Morningstar US Small Cap Broad Growth Extended Index - Morningstar US Small Cap Broad Value Extended Index)



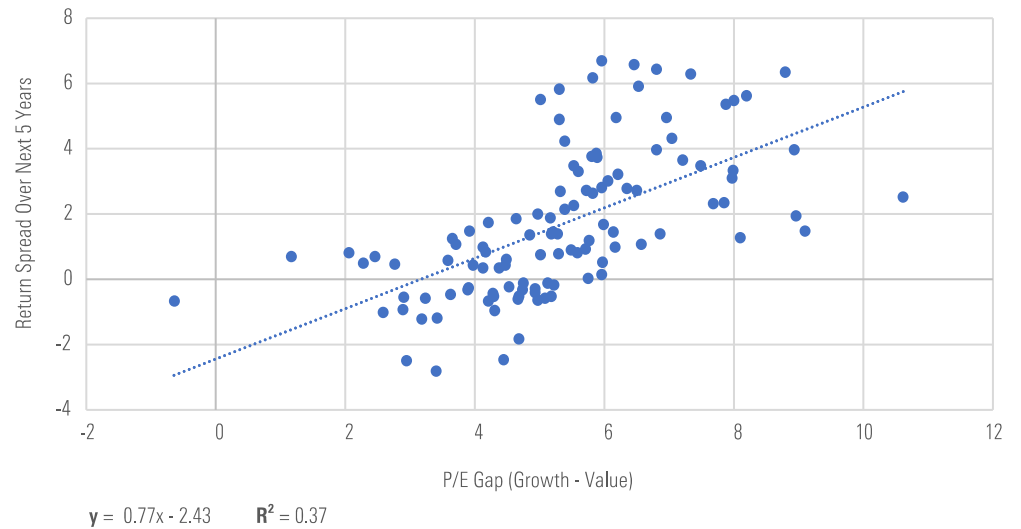
Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 14 Relationship Between Valuations and Future Returns: November 1999 - September 2022
(Morningstar US Large Index - Morningstar US Small Cap Extended Index)



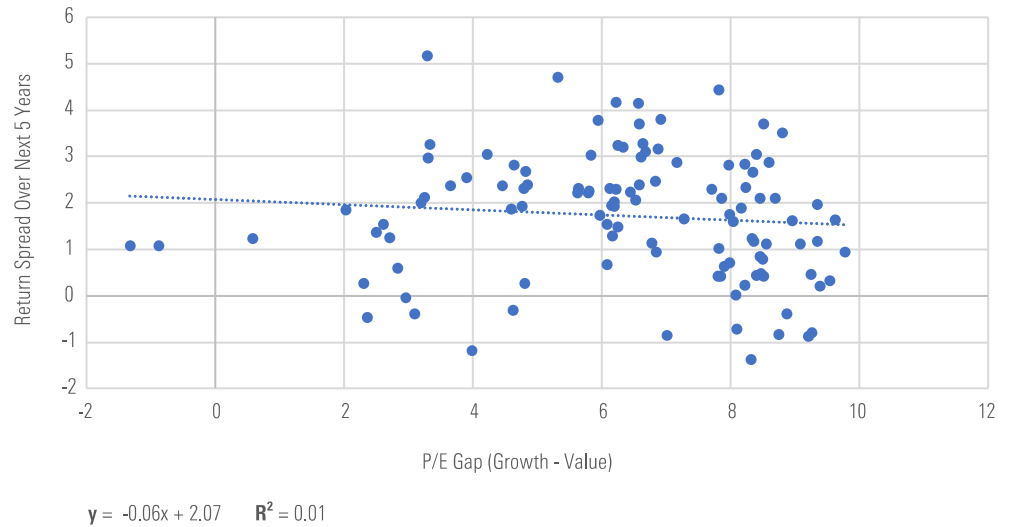
Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 15 Relationship Between Valuations and Future Returns: June 2008 - September 2022
(Morningstar DM ex-US Growth TME Index - Morningstar DM ex-US Value TME Index)



Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 16 Relationship Between Valuations and Future Returns: June 2008 - September 2022
(Morningstar EM Growth TME Index - Morningstar EM Value TME Index)



Source: Morningstar Direct. Data as of Sept. 30, 2022.

Forever in Style

Regardless of market conditions, the Morningstar Broad Style and Global Style index families provide a robust toolkit for style investors. The indexes accurately represent the opportunity set available to style investors across different regions and can facilitate precise performance benchmarking and efficient asset allocation aligned with the Morningstar Style Box. For more information, visit

<https://www.morningstar.com/products/indexes-style>. 

Appendix

Appendix 1: Style Investing

Style investing focuses on two of the most important drivers of stock returns: size and valuations. In 1992's seminal paper "The Cross-Section of Expected Stock Returns," Nobel laureates Eugene Fama and Kenneth French demonstrated that differences in these two variables can explain much of the variation of stock returns. That was the same year the Morningstar Style Box launched. This tool divides the equity market into nine sections along two dimensions: size and value/growth orientation. It has become a widely adopted frame of reference for classifying managed portfolios and assessing performance.

This style framework is also useful for framing asset-allocation decisions. The large-value segment of the market is a fertile hunting ground for mature dividend-payers, while the large-growth segment is home to many highly profitable companies with strong prospects. Small-growth stocks tend to have the greatest potential for capital appreciation, but they also carry considerable risk. Finally, the small-value segment may be where the best bargains are. Historically, this market segment has had the highest returns, though it has experienced long stretches of underperformance.

The Morningstar Broad Style and Global Style indexes provide an effective toolkit to gauge style trends, both in the U.S. and globally. These indexes cast a wider net than the nine segments of the style box, carving the value-growth spectrum into halves rather than thirds. This better reflects the opportunity set available to style investors, as managers often color outside their designated section in the style box. Stocks in the blend segment of the market are partially allocated to both the value and growth indexes, as they often appear in both value and growth managers' portfolios.

Appendix 2: Company Characteristics by Style

Morningstar's broad style and global style indexes each focus on a different type of stock, reflecting the way many active managers define their opportunity set.

Large-growth stocks are often among the market's most enviable businesses. These firms not only tend to enjoy robust growth prospects, but they also typically benefit from dominant market positions and deploy extremely profitable business models. Within the Morningstar Broad Style Index family, the Morningstar US Large Cap Broad Growth Index has the greatest exposure to stocks with Morningstar Economic Moat Ratings of wide, reflecting durable competitive advantages that Morningstar equity analysts expect to last for at least 20 years, as Exhibit 17 illustrates. The constituents of this index also tend to generate a larger share of their revenue outside the U.S. than any of the other broad style indexes, as shown in Exhibit 18.

Similar to the U.S., global growth indexes have the greatest bent toward wide moat ratings, reflecting the structurally more favorable business models of these constituents. These durable competitive advantages are also more prevalent in developed markets relative to emerging. Companies listed in emerging markets are more likely to have to navigate headwinds like tenuous regulatory landscapes (which invite competition) and more-acute economic cyclicality (which detracts from our equity analysts' confidence in the sustainability of their profits).

Exhibit 17 Economic Moat Exposure (%)

| US | Wide Moat | Narrow Moat | None |
|---|------------------|--------------------|-------------|
| Morningstar US Market Extended | 43.10 | 36.48 | 7.09 |
| Morningstar US Market Broad Growth Extended | 46.80 | 34.16 | 5.20 |
| Morningstar US Market Broad Value Extended | 39.82 | 38.66 | 8.83 |
| Morningstar US Large Cap | 56.54 | 39.17 | 3.60 |
| Morningstar US Large Broad Growth | 61.33 | 35.89 | 2.46 |
| Morningstar US Large Broad Value | 52.30 | 42.07 | 4.61 |
| Morningstar US Mid Cap | 13.02 | 40.21 | 19.98 |
| Morningstar US Mid Cap Broad Growth | 17.50 | 40.87 | 14.18 |
| Morningstar US Mid Cap Broad Value | 8.61 | 39.57 | 25.68 |
| Morningstar US Small Cap Extended | 0.84 | 5.79 | 6.49 |
| Morningstar US Small Broad Growth Extended | 0.36 | 5.52 | 6.15 |
| Morningstar US Small Broad Value Extended | 1.35 | 6.20 | 6.98 |
| Global | | | |
| Morningstar Global Target Market Exposure | 38.36 | 33.03 | 12.43 |
| Morningstar Global Growth | 46.35 | 30.52 | 6.74 |
| Morningstar Global Value | 30.76 | 35.46 | 17.90 |
| Morningstar Developed Markets ex-US | 26.31 | 24.57 | 23.89 |
| Morningstar Developed Markets ex-US Growth | 38.69 | 24.99 | 9.81 |
| Morningstar Developed Markets ex-US Value | 14.08 | 24.15 | 37.92 |
| Morningstar Emerging Markets | 14.18 | 16.31 | 14.27 |
| Morningstar Emerging Markets Growth | 21.86 | 13.42 | 11.45 |
| Morningstar Emerging Markets Value | 6.46 | 19.37 | 17.24 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 18 Revenue Generated in the U.S.

| US | % of Revenue from the U.S. |
|---|-----------------------------------|
| Morningstar US Market Extended | 62.97 |
| Morningstar US Market Broad Growth Extended | 57.36 |
| Morningstar US Market Broad Value Extended | 68.13 |
| Morningstar US Large Cap | 58.64 |
| Morningstar US Large Broad Growth | 51.68 |
| Morningstar US Large Broad Value | 64.17 |
| Morningstar US Mid Cap | 73.11 |
| Morningstar US Mid Cap Broad Growth | 68.60 |
| Morningstar US Mid Cap Broad Value | 77.45 |
| Morningstar US Small Cap Extended | 78.96 |
| Morningstar US Small Broad Growth Extended | 77.43 |
| Morningstar US Small Broad Value Extended | 81.24 |
| Global | |
| Morningstar Global Target Market Exposure | 44.22 |
| Morningstar Global Growth | 41.24 |
| Morningstar Global Value | 47.14 |
| Morningstar Developed Markets ex-US | 21.28 |
| Morningstar Developed Markets ex-US Growth | 24.36 |
| Morningstar Developed Markets ex-US Value | 18.26 |
| Morningstar Emerging Markets | 10.14 |
| Morningstar Emerging Markets Growth | 11.63 |
| Morningstar Emerging Markets Value | 8.67 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Large-value stocks tend to be more mature. These include slow-growth giants like Oracle [ORCL](#) and Procter & Gamble [PG](#) in the U.S., and Nestle outside of the U.S. Because they often have strong cash flows and limited need of it to fund growth, these stocks tend to make larger cash distributions to shareholders than their faster-growing and smaller counterparts.

Stocks in the middle of the value-growth spectrum, like Apple [AAPL](#), are found in both the Morningstar US Large Cap Broad Value and Growth indexes. That reflects that they are also found in both value and growth managers' portfolios, as they do not have a strong bias toward one style over the other.

Moving down the market-cap ladder tends to increase both risk and upside potential. Mid-cap growth stocks have a bit more growth runway than their larger counterparts. These companies are often at an earlier stage in their lifecycle yet have been successful, like Datadog [DDOG](#), or could be relatively mature firms transforming their businesses to align with secular growth trends across their markets, like hospitality company Hilton Worldwide [HLT](#).

Small-growth stocks are riskier still. These firms tend to be less profitable and face greater uncertainty than better-established growth stocks, yet with this broader distribution of potential outcomes comes the juiciest growth potential. Pure Storage [PSTG](#), a top holding in the Morningstar US Small Cap Broad Growth Extended Index, exemplifies this promise and risk. Memory applications are increasing exponentially across a slew of end markets from automotive to the "Internet of Things" and hyperscale cloud computing, providing a secular tailwind to purveyors of flash storage tools. However, competition is fierce, and the computer memory industry tends to be quite cyclical, with demand troughs that can be just as deep and acute as the booms.

Mid- and small-cap value stocks also carry greater risk and upside potential than their larger counterparts. This includes a mix of stocks that have simply matured before reaching the large-cap ranks, as well as names that have fallen out of favor, often for good reason. Food distributor Sysco [SY](#) is a good example of the former, while low-cost carrier Southwest Airlines [LUV](#) embodies the latter.

Smaller stocks tend to generate more of their revenue in the U.S., particularly on the value side. The constituents of the Morningstar US Small Cap Broad Value Extended Index generated a larger share of their revenue in the U.S. than any of the other broad style indexes, as shown in Exhibit 18.

Exhibits 19-33 show the top 10 constituents in the large-, mid-, and small-cap extended indexes, the value and growth indexes in those segments, as well as the value and growth indexes for ex-U.S. developed markets and emerging markets.

Exhibit 19 Top Holdings: Morningstar U.S. Large Cap Index

| Constituent | Ticker | Sector | Weighting (%) |
|--------------------------------|--------|------------------------|---------------|
| Apple Inc | AAPL | Technology | 8.19 |
| Microsoft Corp | MSFT | Technology | 6.82 |
| Amazon.com Inc | AMZN | Consumer Cyclical | 3.93 |
| Tesla Inc | TSLA | Consumer Cyclical | 2.77 |
| Alphabet Inc Class A | GOOGL | Communication Services | 2.25 |
| Alphabet Inc Class C | GOOG | Communication Services | 2.02 |
| Berkshire Hathaway Inc Class B | BRK.B | Financial Services | 1.89 |
| UnitedHealth Group Inc | UNH | Healthcare | 1.85 |
| Johnson & Johnson | JNJ | Healthcare | 1.69 |
| Exxon Mobil Corp | XOM | Energy | 1.43 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 20 Top Holdings: Morningstar U.S. Large Broad Growth Index

| Constituent | Ticker | Sector | Weighting (%) |
|------------------------|---------------|------------------------|----------------------|
| Microsoft Corp | MSFT | Technology | 14.54 |
| Apple Inc | AAPL | Technology | 12.00 |
| Amazon.com Inc | AMZN | Consumer Cyclical | 8.38 |
| Tesla Inc | TSLA | Consumer Cyclical | 5.91 |
| Alphabet Inc Class A | GOOGL | Communication Services | 3.28 |
| Alphabet Inc Class C | GOOG | Communication Services | 2.95 |
| NVIDIA Corp | NVDA | Technology | 2.54 |
| Visa Inc Class A | V | Financial Services | 2.43 |
| Mastercard Inc Class A | MA | Financial Services | 2.03 |
| UnitedHealth Group Inc | UNH | Healthcare | 1.83 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 21 Top Holdings: Morningstar U.S Broad Value Index

| Constituent | Ticker | Sector | Weighting (%) |
|--------------------------------|---------------|--------------------|----------------------|
| Apple Inc | AAPL | Technology | 4.83 |
| Berkshire Hathaway Inc Class B | BRK.B | Financial Services | 3.56 |
| Johnson & Johnson | JNJ | Healthcare | 3.18 |
| Exxon Mobil Corp | XOM | Energy | 2.69 |
| JPMorgan Chase & Co | JPM | Financial Services | 2.27 |
| Procter & Gamble Co | PG | Consumer Defensive | 2.23 |
| Chevron Corp | CVX | Energy | 1.91 |
| UnitedHealth Group Inc | UNH | Healthcare | 1.87 |
| Pfizer Inc | PFE | Healthcare | 1.82 |
| AbbVie Inc | ABBV | Healthcare | 1.75 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 22 Top Holdings: Morningstar U.S. Mid Cap Index

| Constituent | Ticker | Sector | Weighting (%) |
|--------------------------|--------|--------------------|---------------|
| AutoZone Inc | AZO | Consumer Cyclical | 0.59 |
| Cheniere Energy Inc | LNG | Energy | 0.59 |
| Devon Energy Corp | DVN | Energy | 0.56 |
| Phillips 66 | PSX | Energy | 0.55 |
| Biogen Inc | BIIB | Healthcare | 0.55 |
| Enphase Energy Inc | ENPH | Technology | 0.53 |
| Motorola Solutions Inc | MSI | Technology | 0.53 |
| Agilent Technologies Inc | A | Healthcare | 0.52 |
| Arthur J. Gallagher & Co | AJG | Financial Services | 0.51 |
| Realty Income Corp | O | Real Estate | 0.51 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 23 Top Holdings: Morningstar U.S. Mid Cap Broad Growth Index

| Constituent | Ticker | Sector | Weighting (%) |
|--------------------------|--------|--------------------|---------------|
| Cheniere Energy Inc | LNG | Energy | 1.19 |
| Enphase Energy Inc | ENPH | Technology | 1.08 |
| Agilent Technologies Inc | A | Healthcare | 1.04 |
| MSCI Inc | MSCI | Financial Services | 0.97 |
| Microchip Technology Inc | MCHP | Technology | 0.97 |
| ResMed Inc | RMD | Healthcare | 0.92 |
| Albemarle Corp | ALB | Basic Materials | 0.89 |
| SBA Communications Corp | SBAC | Real Estate | 0.88 |
| Yum Brands Inc | YUM | Consumer Cyclical | 0.87 |
| Ross Stores Inc | ROST | Consumer Cyclical | 0.84 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 24 Top Holdings: Morningstar U.S. Mid Cap Broad Value Index

| Constituent | Ticker | Sector | Weighting (%) |
|-------------------------------------|--------|--------------------|---------------|
| Devon Energy Corp | DVN | Energy | 1.11 |
| Phillips 66 | PSX | Energy | 1.10 |
| Biogen Inc | BIB | Healthcare | 1.09 |
| Xcel Energy Inc | XEL | Utilities | 0.99 |
| Allstate Corp | ALL | Financial Services | 0.95 |
| Kinder Morgan Inc Class P | KMI | Energy | 0.93 |
| Aflac Inc | AFL | Financial Services | 0.91 |
| M&T Bank Corp | MTB | Financial Services | 0.87 |
| Consolidated Edison Inc | ED | Utilities | 0.86 |
| VICI Properties Inc Ordinary Shares | VICI | Real Estate | 0.81 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 25 Top Holdings: Morningstar U.S. Small Cap Extended Index

| Constituent | Ticker | Sector | Weighting (%) |
|--|--------|--------------------|---------------|
| ShockWave Medical Inc | SWAV | Healthcare | 0.32 |
| Sarepta Therapeutics Inc | SRPT | Healthcare | 0.31 |
| Biohaven Pharmaceutical Holding Co Ltd | BHVN | Healthcare | 0.31 |
| Healthcare Realty Trust Inc | HR | Real Estate | 0.26 |
| HF Sinclair Corp | DINO | Energy | 0.25 |
| Casey's General Stores Inc | CASY | Consumer Cyclical | 0.24 |
| Unum Group | UNM | Financial Services | 0.24 |
| Penumbra Inc | PEN | Healthcare | 0.23 |
| Acadia Healthcare Co Inc | ACHC | Healthcare | 0.23 |
| Change Healthcare Inc Ordinary Shares | CHNG | Healthcare | 0.22 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 26 Top Holdings: Morningstar U.S. Small Broad Growth Extended Index

| Constituent | Ticker | Sector | Weighting (%) |
|--|--------|-------------------|---------------|
| ShockWave Medical Inc | SWAV | Healthcare | 0.65 |
| Sarepta Therapeutics Inc | SRPT | Healthcare | 0.63 |
| Biohaven Pharmaceutical Holding Co Ltd | BHVN | Healthcare | 0.63 |
| Penumbra Inc | PEN | Healthcare | 0.47 |
| DraftKings Inc Ordinary Shares - Class A | DKNG | Consumer Cyclical | 0.44 |
| Chart Industries Inc | GTLS | Industrials | 0.43 |
| Apellis Pharmaceuticals Inc | APLS | Healthcare | 0.41 |
| Ionis Pharmaceuticals Inc | IONS | Healthcare | 0.41 |
| Karuna Therapeutics Inc | KRTX | Healthcare | 0.39 |
| Sunrun Inc | RUN | Technology | 0.38 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 27 Top Holdings: Morningstar U.S. Small Value Extended Index

| Constituent | Ticker | Sector | Weighting (%) |
|---------------------------------|--------|------------------------|---------------|
| HF Sinclair Corp | DINO | Energy | 0.52 |
| Unum Group | UNM | Financial Services | 0.48 |
| Omega Healthcare Investors Inc | OHI | Real Estate | 0.45 |
| Nexstar Media Group Inc | NXST | Communication Services | 0.43 |
| NOV Inc | NOV | Energy | 0.42 |
| Pinnacle Financial Partners Inc | PNFP | Financial Services | 0.41 |
| CACI International Inc Class A | CACI | Technology | 0.40 |
| Prosperity Bancshares Inc | PB | Financial Services | 0.40 |
| SouthState Corp | SSB | Financial Services | 0.39 |
| Dick's Sporting Goods Inc | DKS | Consumer Cyclical | 0.39 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 28 Top Holdings: Morningstar Developed Markets ex-U.S. TME Index

| Constituent | Ticker | Sector | Weighting (%) |
|-------------------------------------|--------|--------------------|---------------|
| Nestle SA | NESN | Consumer Defensive | 2.08 |
| Roche Holding AG | ROG | Healthcare | 1.61 |
| Shell PLC | SHEL | Energy | 1.33 |
| Novartis AG | NOVN | Healthcare | 1.28 |
| ASML Holding NV | ASML | Technology | 1.20 |
| AstraZeneca PLC | AZN | Healthcare | 1.20 |
| Novo Nordisk A/S Class B | NOVO B | Healthcare | 1.14 |
| Toyota Motor Corp | 7203 | Consumer Cyclical | 1.13 |
| LVMH Moet Hennessy Louis Vuitton SE | MC | Consumer Cyclical | 1.09 |
| Royal Bank of Canada | RY | Financial Services | 0.88 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 29 Top Holdings: Morningstar Developed Markets ex-U.S. Growth TME Index

| Constituent | Ticker | Sector | Weighting (%) |
|-------------------------------------|--------|--------------------|---------------|
| Nestle SA | NESN | Consumer Defensive | 2.54 |
| ASML Holding NV | ASML | Technology | 2.41 |
| AstraZeneca PLC | AZN | Healthcare | 2.40 |
| Novo Nordisk A/S Class B | NOVO B | Healthcare | 2.30 |
| LVMH Moet Hennessy Louis Vuitton SE | MC | Consumer Cyclical | 2.19 |
| Roche Holding AG | ROG | Healthcare | 1.60 |
| Diageo PLC | DGE | Consumer Defensive | 1.38 |
| Novartis AG | NOVN | Healthcare | 1.37 |
| CSL Ltd | CSL | Healthcare | 1.23 |
| L'Oreal SA | OR | Consumer Defensive | 1.14 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 30 Top Holdings: Morningstar Developed Markets ex-U.S. Value TME Index

| Constituent | Ticker | Sector | Weighting (%) |
|------------------------------|--------|--------------------|---------------|
| Shell PLC | SHEL | Energy | 2.66 |
| BHP Group Ltd | BHP | Basic Materials | 1.74 |
| Nestle SA | NESN | Consumer Defensive | 1.63 |
| TotalEnergies SE | TTE | Energy | 1.62 |
| Roche Holding AG | ROG | Healthcare | 1.61 |
| BP PLC | BP | Energy | 1.40 |
| Novartis AG | NOVN | Healthcare | 1.20 |
| Toyota Motor Corp | 7203 | Consumer Cyclical | 1.13 |
| British American Tobacco PLC | BATS | Consumer Defensive | 1.12 |
| HSBC Holdings PLC | HSBA | Financial Services | 1.01 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 31 Top Holdings: Morningstar Emerging Markets TME Index

| Constituent | Ticker | Sector | Weighting (%) |
|---|-----------|------------------------|---------------|
| Taiwan Semiconductor Manufacturing Co Ltd | 2330 | Technology | 4.23 |
| Tencent Holdings Ltd | 00700 | Communication Services | 3.46 |
| Samsung Electronics Co Ltd | 005930 | Technology | 3.21 |
| Alibaba Group Holding Ltd Ordinary Shares | 09988 | Consumer Cyclical | 2.64 |
| Reliance Industries Ltd | RELIANCE | Energy | 1.70 |
| Meituan Class B | 03690 | Consumer Cyclical | 1.45 |
| Infosys Ltd | INFY | Technology | 1.07 |
| JD.com Inc Ordinary Shares - Class A | 09618 | Consumer Cyclical | 1.00 |
| China Construction Bank Corp Class H | 00939 | Financial Services | 0.96 |
| ICICI Bank Ltd | ICICIBANK | Financial Services | 0.92 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 32 Top Holdings: Morningstar Emerging Markets Growth TME Index

| Constituent | Ticker | Sector | Weighting (%) |
|---|-----------|------------------------|---------------|
| Taiwan Semiconductor Manufacturing Co Ltd | 2330 | Technology | 8.42 |
| Tencent Holdings Ltd | 00700 | Communication Services | 6.88 |
| Meituan Class B | 03690 | Consumer Cyclical | 2.88 |
| Alibaba Group Holding Ltd Ordinary Shares | 09988 | Consumer Cyclical | 2.33 |
| Reliance Industries Ltd | RELIANCE | Energy | 2.17 |
| ICICI Bank Ltd | ICICIBANK | Financial Services | 1.83 |
| Housing Development Finance Corp Ltd | HDFC | Financial Services | 1.71 |
| International Holdings Co PJSC | IHC | Consumer Defensive | 1.54 |
| Al Rajhi Bank | 1120 | Financial Services | 1.42 |
| Infosys Ltd | INFY | Technology | 1.31 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Exhibit 33 Top Holdings: Morningstar Emerging Markets Value TME Index

| Constituent | Ticker | Sector | Weighting (%) |
|---|----------|------------------------|---------------|
| Samsung Electronics Co Ltd | 005930 | Technology | 6.49 |
| Alibaba Group Holding Ltd Ordinary Shares | 09988 | Consumer Cyclical | 2.99 |
| China Construction Bank Corp Class H | 00939 | Financial Services | 1.94 |
| Vale SA | VALE3 | Basic Materials | 1.76 |
| Hon Hai Precision Industry Co Ltd | 2317 | Technology | 1.32 |
| Reliance Industries Ltd | RELIANCE | Energy | 1.23 |
| Industrial And Commercial Bank Of China Ltd | 01398 | Financial Services | 1.14 |
| Baidu Inc | 09888 | Communication Services | 1.12 |
| JD.com Inc Ordinary Shares - Class A | 09618 | Consumer Cyclical | 1.11 |
| SK Hynix Inc | 000660 | Technology | 1.07 |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Appendix 3: Funds That Track Morningstar Broad Style Indexes

Exhibit 34 Funds That Track Morningstar Broad Style Indexes

| Name | SecId | Ticker | Domicile | Primary Prospectus Benchmark |
|--|------------|--------|---------------|---|
| BNY Mellon US Large Cap Core Equity ETF | F0000149CO | BKLC | United States | Morningstar US Large Cap TR USD |
| iShares Morningstar Growth ETF | FEUSA04ACO | ILCG | United States | Morningstar US Large Mid Brd Grt TR USD |
| iShares Morningstar Value ETF | FEUSA04ACP | ILCV | United States | Morningstar US Large Mid Brd Val TR USD |
| Lyxor Core Morningstar US (DR) ETF-Dist | F0000109UX | LCUD | Luxembourg | Morningstar US Large-Mid NR USD |
| iShares Morningstar U.S. Equity ETF | FEUSA04ACN | ILCB | United States | Morningstar US Large-Mid TR USD |
| NBI U.S. Equity Index 0 | F000013VX6 | | Canada | Morningstar US Large-Mid TR USD |
| NBI U.S. Equity Index INV-2 | F000016TJI | | Canada | Morningstar US Large-Mid TR USD |
| iShares Morningstar Mid-Cap Growth ETF | FEUSA04ACR | IMCG | United States | Morningstar US Mid Cap Brd Grt TR USD |
| iShares Morningstar Mid-Cap Value ETF | FEUSA04ACS | IMCV | United States | Morningstar US Mid Cap Brd Val TR USD |
| BNY Mellon US Mid Cap Core Equity ETF | F0000149CP | BKMC | United States | Morningstar US Mid Cap TR USD |
| iShares Morningstar Mid-Cap ETF | FEUSA04ACQ | IMCB | United States | Morningstar US Mid Cap TR USD |
| iShares Morningstar Small-Cap Growth ETF | FEUSA04ACU | ISCG | United States | Morningstar US Small Brd Grt Ext TR USD |
| iShares Morningstar Small-Cap Value ETF | FEUSA04ACV | ISCV | United States | Morningstar US Small Brd Val Ext TR USD |
| iShares Morningstar Small-Cap ETF | FEUSA04ACT | ISCB | United States | Morningstar US Small Cap Ext TR USD |

Source: Morningstar Direct. Data as of Sept. 30, 2022.

Appendix 4: Morningstar Standard Factor Model

For more information about the methodology of the Standard Factor Model, visit the following link:

https://assets.contentstack.io/v3/assets/blt4eb669caa7dc65b2/bltf09d73b4a44d9f14/61b8e525ad89d90d95a0a5c4/Factor_Profile_Methodology.pdf

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